

Chemical Analysis Report

NE-DIST-2018-05-03-02

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Gville**
Request ID: **RQ-2018-04-30-27**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 30-MAY-2018 14:47

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the "T" and a long horizontal stroke at the end.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: LAKE FOREST CREEK @ UNIVERSITY AVE

Collection Date/Time: 05/02/2018 10:10

Field ID: 20020124

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1989947	EPA 8321B	2,4-D	0.0092		ug/L	P344670	MS
		Bentazon	8.0E-04	U	ug/L	P344670	
		MCP	0.0020	U	ug/L	P344670	
		Triclopyr**	0.0040	U	ug/L	P344670	
		Imidacloprid	0.0041	I	ug/L	P344670	
		Diuron	0.0020	U	ug/L	P344670	
		Pyraclostrobin**	0.0020	U	ug/L	P344670	
		Primidone**	0.0040	U	ug/L	P344670	
		Linuron	0.0040	U	ug/L	P344670	
		Acetaminophen**	0.0080	U	ug/L	P344670	
		Fenuron	0.021	I	ug/L	P344670	MS
		Imazapyr**	0.018		ug/L	P344670	
		Carbamazepine**	4.6E-04	I	ug/L	P344670	
		Fluridone**	4.0E-04	U	ug/L	P344670	
		Hydrocodone**	8.0E-04	U	ug/L	P344670	
		Sucralose**	0.25	I	ug/L	P344561	

Ref. Method and Comment:
 EPA 8321B: Refer to the narrative for an explanation of QC Codes.

Sample Location: BIVIN ARM OUTLET @ 331

Collection Date/Time: 05/02/2018 10:50

Field ID: G3NE0012

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1989948	EPA 8321B	2,4-D	0.0020	U	ug/L	P344670	MS
		Bentazon	8.0E-04	U	ug/L	P344670	
		MCP	0.0020	U	ug/L	P344670	
		Triclopyr**	0.0040	U	ug/L	P344670	
		Imidacloprid	0.0020	U	ug/L	P344670	
		Diuron	0.073		ug/L	P344670	
		Pyraclostrobin**	0.0020	U	ug/L	P344670	
		Primidone**	0.0040	U	ug/L	P344670	
		Linuron	0.0040	U	ug/L	P344670	
		Acetaminophen**	0.0080	U	ug/L	P344670	
		Fenuron	0.015	I	ug/L	P344670	MS
		Imazapyr**	0.031		ug/L	P344670	
		Carbamazepine**	4.0E-04	U	ug/L	P344670	
		Fluridone**	0.0098		ug/L	P344670	
		Hydrocodone**	8.0E-04	U	ug/L	P344670	
		Sucralose**	0.18	I	ug/L	P344561	

Ref. Method and Comment:
 EPA 8321B: Results confirmed in re-extraction.

Sample Location: BIVIN ARM OUTLET @ 331

Collection Date/Time: 05/02/2018 10:55

Field ID: G3NE0012DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1989949	EPA 8321B	2,4-D	0.0020	U	ug/L	P344670	MS
		Bentazon	8.0E-04	U	ug/L	P344670	
		MCPP	0.0020	U	ug/L	P344670	
		Triclopyr**	0.0040	U	ug/L	P344670	
		Imidacloprid	0.0020	U	ug/L	P344670	
		Diuron	0.069		ug/L	P344670	
		Pyraclostrobin**	0.0020	U	ug/L	P344670	
		Primidone**	0.0040	U	ug/L	P344670	
		Linuron	0.0040	U	ug/L	P344670	
		Acetaminophen**	0.0080	U	ug/L	P344670	
		Fenuron	0.011	I	ug/L	P344670	MS
		Imazapyr**	0.031		ug/L	P344670	
		Carbamazepine**	4.0E-04	U	ug/L	P344670	
		Fluridone**	0.0093		ug/L	P344670	
		Hydrocodone**	8.0E-04	U	ug/L	P344670	
		Sucralose**	0.13	I	ug/L	P344561	

Ref. Method and Comment:
EPA 8321B: Results confirmed in re-extraction.

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P344561

Component	Result	Code	Units
Sucralose	0.10	U	ug/L

Reference Method: EPA 8321B
Batch ID: P344670

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P344561

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	96.6		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P344670

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	61.4		P	40 - 150
Acetaminophen	109		P	30 - 150
Bentazon	72.8		P	30 - 150
Carbamazepine	85.7		P	40 - 150
Diuron	83.9		P	40 - 150
Fenuron	105		P	40 - 150
Fluridone	117		P	40 - 150
Hydrocodone	108		P	40 - 150
Imazapyr	93.6		P	40 - 150
Imidacloprid	108		P	40 - 160
Linuron	95.8		P	40 - 150
MCPP	94.5		P	40 - 150
Primidone	92.9		P	40 - 150
Pyraclostrobin	87.5		P	40 - 150
Triclopyr	94.6		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P344561

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989731	Sucralose	114	99.2	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P344670

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990379	2,4-D	35.2	52.4	F/P	40 - 150
1990379	Acetaminophen	70.6	76.6	P/P	30 - 150
1990379	Bentazon	77.2	92.0	P/P	30 - 150
1990379	Carbamazepine	54.3	53.2	P/P	40 - 150
1990379	Diuron	51.7	45.5	P/P	40 - 150
1990379	Fenuron	21.1	19.3	F/F	40 - 150
1990379	Fluridone	82.7	85.1	P/P	40 - 150
1990379	Hydrocodone	96.3	91.6	P/P	40 - 150
1990379	Imazapyr	87.7	88.4	P/P	40 - 150
1990379	Imidacloprid	132	135	P/P	40 - 160
1990379	Linuron	71.9	75.0	P/P	40 - 150
1990379	MCPP	68.5	72.5	P/P	40 - 150
1990379	Primidone	80.6	77.0	P/P	40 - 150
1990379	Pyraclostrobin	70.8	78.0	P/P	40 - 150
1990379	Triclopyr	69.0	74.6	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P344561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989731	Sucralose	12.9	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P344670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990379	2,4-D	25.7	Spike	P	0 - 30
1990379	Acetaminophen	8.16	Spike	P	0 - 30
1990379	Bentazon	13.8	Spike	P	0 - 30
1990379	Carbamazepine	2.06	Spike	P	0 - 30
1990379	Diuron	12.8	Spike	P	0 - 30
1990379	Fenuron	1.90	Spike	P	0 - 30
1990379	Fluridone	2.89	Spike	P	0 - 30
1990379	Hydrocodone	5.03	Spike	P	0 - 30
1990379	Imazapyr	0.833	Spike	P	0 - 30
1990379	Imidacloprid	1.87	Spike	P	0 - 30
1990379	Linuron	4.18	Spike	P	0 - 30
1990379	MCPP	4.83	Spike	P	0 - 30
1990379	Primidone	4.55	Spike	P	0 - 30
1990379	Pyraclostrobin	9.63	Spike	P	0 - 30
1990379	Triclopyr	7.81	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 1989947
Field Sample ID: 20020124

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	66.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	90.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	56.4	P	30 - 160
EPA 8321B	Diuron-d6	50.3	P	30 - 160
EPA 8321B	Primidone-d5	75.1	P	30 - 160
EPA 8321B	Sucralose-d6	77.5	P	40 - 160

Lab Sample ID: 1989948
Field Sample ID: G3NE0012

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	77.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	79.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	58.9	P	30 - 160
EPA 8321B	Diuron-d6	59.4	P	30 - 160
EPA 8321B	Primidone-d5	82.4	P	30 - 160
EPA 8321B	Sucralose-d6	76.8	P	40 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1989949
Field Sample ID: G3NE0012DUP

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	76.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	76.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	60.6	P	30 - 160
EPA 8321B	Diuron-d6	58.4	P	30 - 160
EPA 8321B	Primidone-d5	80.9	P	30 - 160
EPA 8321B	Sucralose-d6	81.1	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A83883
Included Lab Sample IDs: 1989947, 1989948, 1989949

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	141	128	P/P	60 - 150
Carbamazepine	123	113	P/P	60 - 150
Diuron	128	125	P/P	60 - 150
Fenuron	109	113	P/P	60 - 150
Fluridone	122	127	P/P	60 - 160
Hydrocodone	124	120	P/P	60 - 150
Imazapyr	105	103	P/P	50 - 150
Imidacloprid	97.4	103	P/P	60 - 150
Linuron	107	112	P/P	60 - 150
Primidone	93.6	101	P/P	60 - 150
Pyraclostrobin	103	96.3	P/P	60 - 150

Reference Method: EPA 8321B
Run ID: A83887
Included Lab Sample IDs: 1989947, 1989948, 1989949

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	104	106	P/P	50 - 150
2,4-D	106	104	P/P	50 - 150
Bentazon	107	109	P/P	50 - 150
Bentazon	113	107	P/P	50 - 150
MCP	105	106	P/P	50 - 150
MCP	106	105	P/P	50 - 150
Triclopyr	111	111	P/P	50 - 160
Triclopyr	111	104	P/P	50 - 160

Reference Method: EPA 8321B
Run ID: A83902
Included Lab Sample IDs: 1989947, 1989948, 1989949

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	157	110	P/P	60 - 160

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8321B	2,4-D	61.4	35.2	52.4			25.7
	Acetaminophen	109	70.6	76.6			8.16
	Bentazon	72.8	77.2	92.0			13.8
	Carbamazepine	85.7	54.3	53.2			2.06
	Diuron	83.9	51.7	45.5			12.8
	Fenuron	105	21.1	19.3			1.90
	Fluridone	117	82.7	85.1			2.89
	Hydrocodone	108	96.3	91.6			5.03
	Imazapyr	93.6	87.7	88.4			0.833
	Imidacloprid	108	132	135			1.87
	Linuron	95.8	71.9	75.0			4.18
	MCP	94.5	68.5	72.5			4.83
	Primidone	92.9	80.6	77.0			4.55
	Pyraclostrobin	87.5	70.8	78.0			9.63
	Sucralose	96.6	114	99.2			12.9
	Triclopyr	94.6	69.0	74.6			7.81

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1989947, 1989948, 1989949

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	05/03/2018	05/03/2018 17:00	Hoor Shaik	05/04/2018 17:42	Juyoung Kim	1989947
	05/03/2018	05/03/2018 17:00	Hoor Shaik	05/04/2018 18:01	Juyoung Kim	1989948
	05/03/2018	05/03/2018 17:00	Hoor Shaik	05/04/2018 18:19	Juyoung Kim	1989949
	05/03/2018	05/09/2018 09:00	Hoor Shaik	05/10/2018 09:26	Juyoung Kim	1989947
	05/03/2018	05/09/2018 09:00	Hoor Shaik	05/10/2018 10:01	Juyoung Kim	1989948
	05/03/2018	05/09/2018 09:00	Hoor Shaik	05/10/2018 10:36	Juyoung Kim	1989949
	05/03/2018	05/09/2018 09:00	Hoor Shaik	05/11/2018 09:39	Juyoung Kim	1989947
	05/03/2018	05/09/2018 09:00	Hoor Shaik	05/11/2018 10:13	Juyoung Kim	1989948
	05/03/2018	05/09/2018 09:00	Hoor Shaik	05/11/2018 11:23	Juyoung Kim	1989949